

### REMARKS

This communication responds to the Office Action mailed on March 27, 2006. No claims are amended, claims 18-29 are canceled, and no claims are added. As a result, claims 1-17 and 30-46 are now pending in this Application (claims 6-11, 30-39, and 44-46 have been withdrawn from consideration).

#### §103 Rejection of the Claims

Claims 1-5 and 12-17 were rejected under 35 USC § 103(a) as being unpatentable over Shimiau et al. (Publication No. 59085395; hereinafter "Shimizu") in view of McAndrew (U.S. 6,066,402; hereinafter "McAndrew"). First, the Applicant does not admit that Shimizu or McAndrew are prior art, and reserves the right to swear behind these references in the future. Second, since a *prima facie* case of obviousness has not been established, the Applicant respectfully traverses this rejection.

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d (BNA) 1596, 1598 (Fed. Cir. 1988).

The M.P.E.P. contains explicit direction to the Examiner in accordance with the *In re Fine* court:

In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d (BNA) 1438 (Fed. Cir. 1991)).

The requirement of a suggestion or motivation to combine references in a *prima facie* case of obviousness is emphasized in the Federal Circuit opinion, *In re Sang Su Lee*, 277 F.3d 1338; 61 U.S.P.Q.2D 1430 (Fed. Cir. 2002), which indicates that the motivation must be supported by evidence in the record.

No proper *prima facie* case of obviousness has been established because (1) combining the references does not teach all of the limitations set forth in the claims, (2) there is no motivation to combine the references, and (3) combining the references provides no reasonable expectation of success. Each of these points will be explained in detail, as follows.

***The Combination of References Does not Teach All Limitations:*** Shimizu teaches a terminal electrode finish of 97.5% lead, 1.0% tin, and 1.5% silver. However, Shimizu does not teach the finish being “attached *after* a first lead finish including tin is removed” as claimed by the Applicant in independent claims 1 and 12. Neither does McAndrew. Therefore, no combination of these references can provide what is claimed by the Applicant.

***No Motivation to Combine the References:*** The Office asserts that “it would be obvious ... to include antimony as taught by McAndrew in the ... finish layer of Shimizu et al. to obtain the above benefit [i.e., to achieve good mechanical strength].” However, this suggestion to combine the references overlooks the fact that Shimizu teaches the use of a three-component solder *consisting* of lead, tin, and silver. *See* Shimizu, abstract. This language excludes the use of other components. Moreover, even if antimony were added to the formulation of Shimizu, McAndrew teaches the use of at least 8.5% antimony. *See* McAndrew, Col. 3, lines 4-21. This amount of antimony, plus the minimum amount of lead taught by Shimizu (90%), only leaves 1.5% of the composition for other components, which does not permit the inclusion of the minimum amount of silver taught by Shimizu (1.5%), as well as the minimum amount of tin (1%). *See* Shimizu, abstract.

It is respectfully noted that the test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *See Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985) (emphasis added). References must be considered in their entirety, including parts that teach away from the claims. *See* MPEP § 2141.02. Since Shimizu teaches away from using a composition that employs 8.5% of antimony, as taught by McAndrew, there is no motivation to combine these references.

***No Reasonable Expectation of Success:*** McAndrew teaches away from the use of silver solders, describing such alloys as leading to “brittleness, particularly at low temperatures, and an

affinity for copper.” *See* McAndrew, Col. 2, lines 43-48. McAndrew goes on to note that these characteristics promote “electrical and mechanical failure after short time periods when the exposure exceeds 150 degrees C.” *Id.* at lines 48-51. Thus, one of skill in the art would not have a reasonable expectation of success when attempting to combine the antimony of McAndrew with the silver alloy of Shimizu.

The use of unsupported assertions in the Office Action does not satisfy the explicit requirements needed to demonstrate motivation as set forth by the *In re Sang Su Lee* court. Therefore, the Examiner appears to be using personal knowledge, and is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

In summary, the references neither teach nor suggest the claimed finish being “attached *after* a first lead finish including tin is removed,” and the modification suggested by the Office does not lead to a reasonable expectation of success by one of ordinary skill in the art. In fact, each of the references teach away from such a combination. Thus, the requirements of *M.P.E.P.* § 2142 have not been satisfied; and a *prima facie* case of obviousness has not been established with respect to the Applicant’s claims. It is therefore respectfully requested that the rejection of claims 1-5 and 12-17 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Allowable Subject Matter

Claims 40-43 have been allowed.

CONCLUSION

The Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney Mark V. Muller at (210) 308-5677, or the undersigned at (612) 371-2103 to facilitate prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date June 26, 2006

By Mark V. Muller

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 26<sup>th</sup> day of June, 2006.

PATRICIA A. HULTMAN  
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Signature